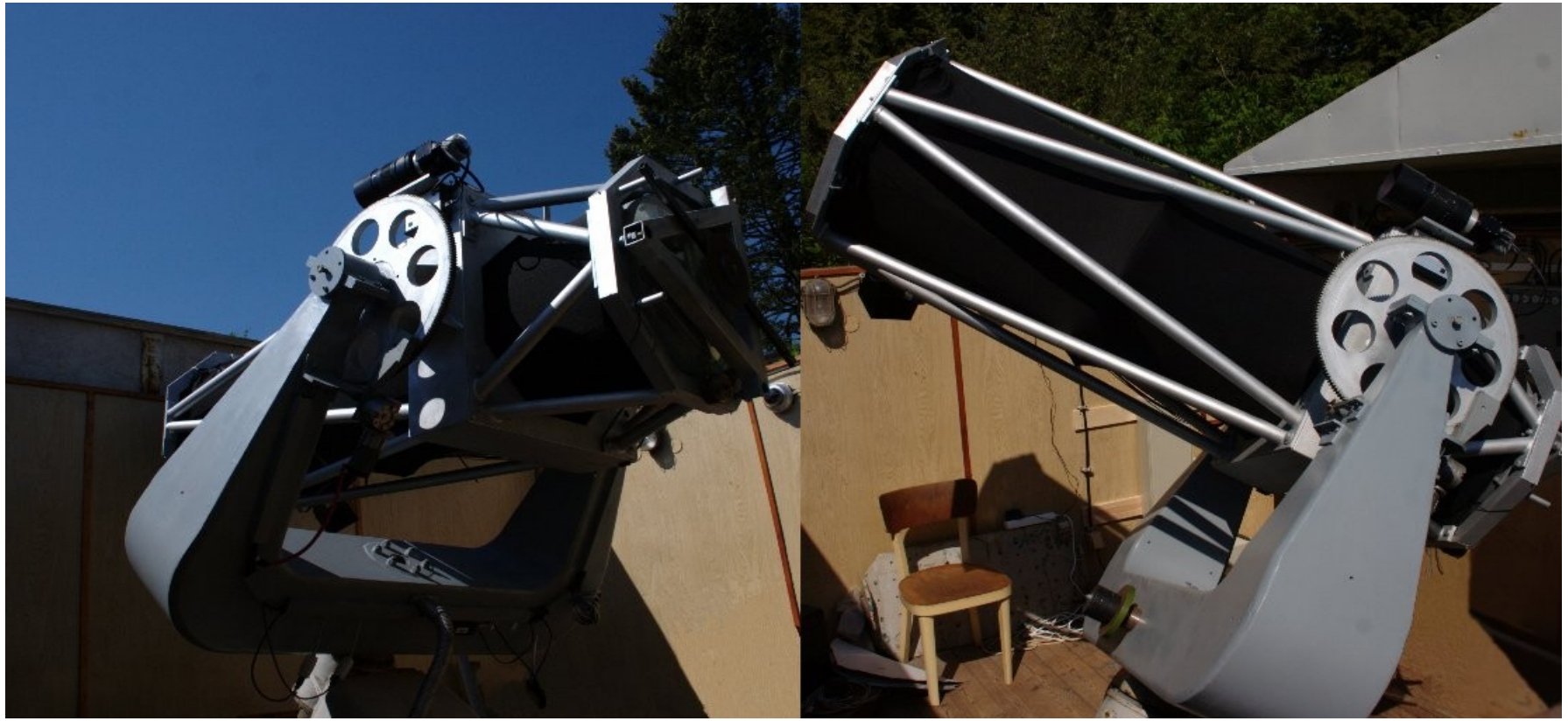
D50 - Telescope for GRBs & HE sources



Matúš Kocka
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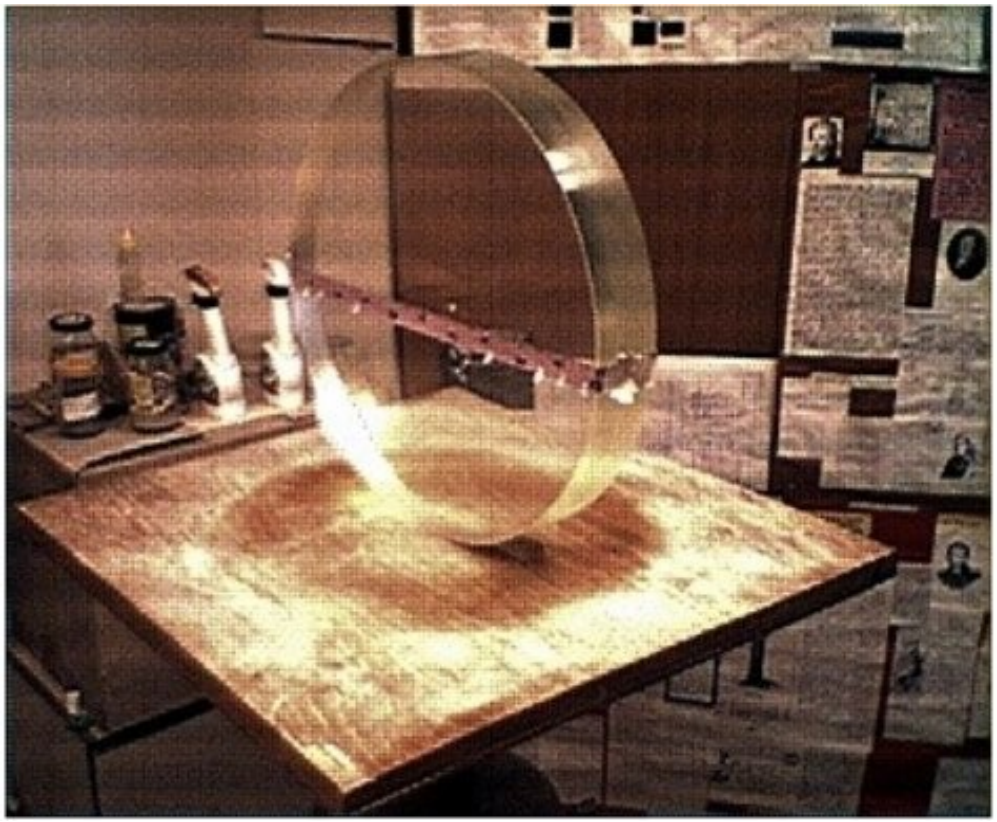
Astronomical Institute of CR, Stellar department,
Group of Hight Energy Astrophysics

D50 – Looking back in history

D50 telescope is 0.5m robotic telescope located in Astronomical Institute in Ondrejov. It's kind of hand made telescope, reconstructed from an old equatorial mount and hand made mirror from Cyril Polasek



D50 – Present

NF - FLI IMG 47-10, BVRI, focuser, CCD - E2V 1024 x 1024 (1.18 arcsec/px) with FOV 21 x 21 arcmin
WF – FLI MaxCam CM-8, FOV 1,5 x 1 deg

End of 2007 → **Present**

D50 – GRBs observations

GRB 080430
GRB 080506
GRB 080710
GRB 080725
GRB 080727B
GRB 080810
GRB 080822
GRB 080901
GRB 080903
GRB 080908
GRB 080925
GRB 081102
GRB 090107
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- More than 9.6 GB raw images of GRBs positions
- More than 150GB raw data of ~50 objects
- More than 40GB of darks and flatfields
- Uncountable cups of coffee and Pu-erh tea

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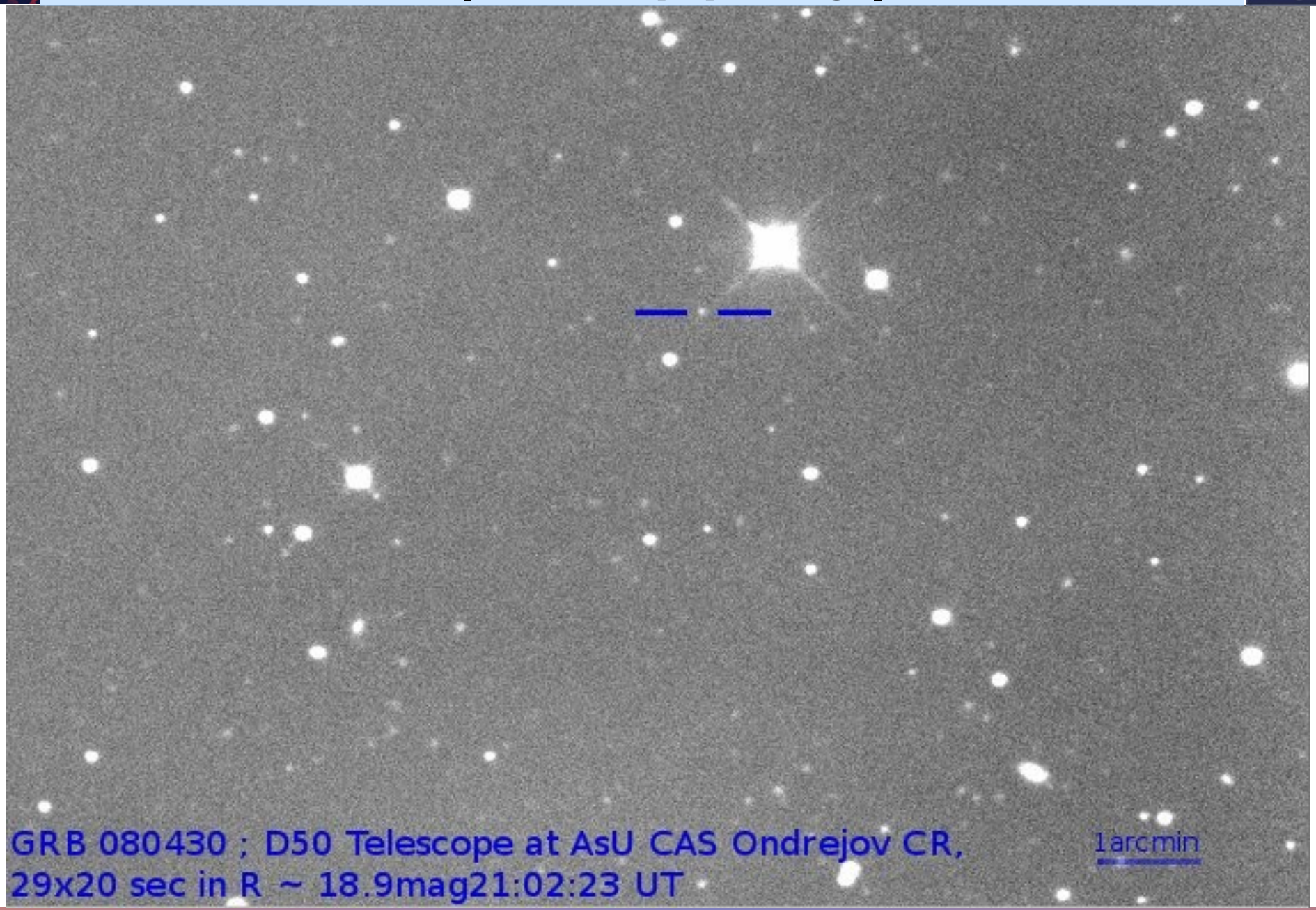
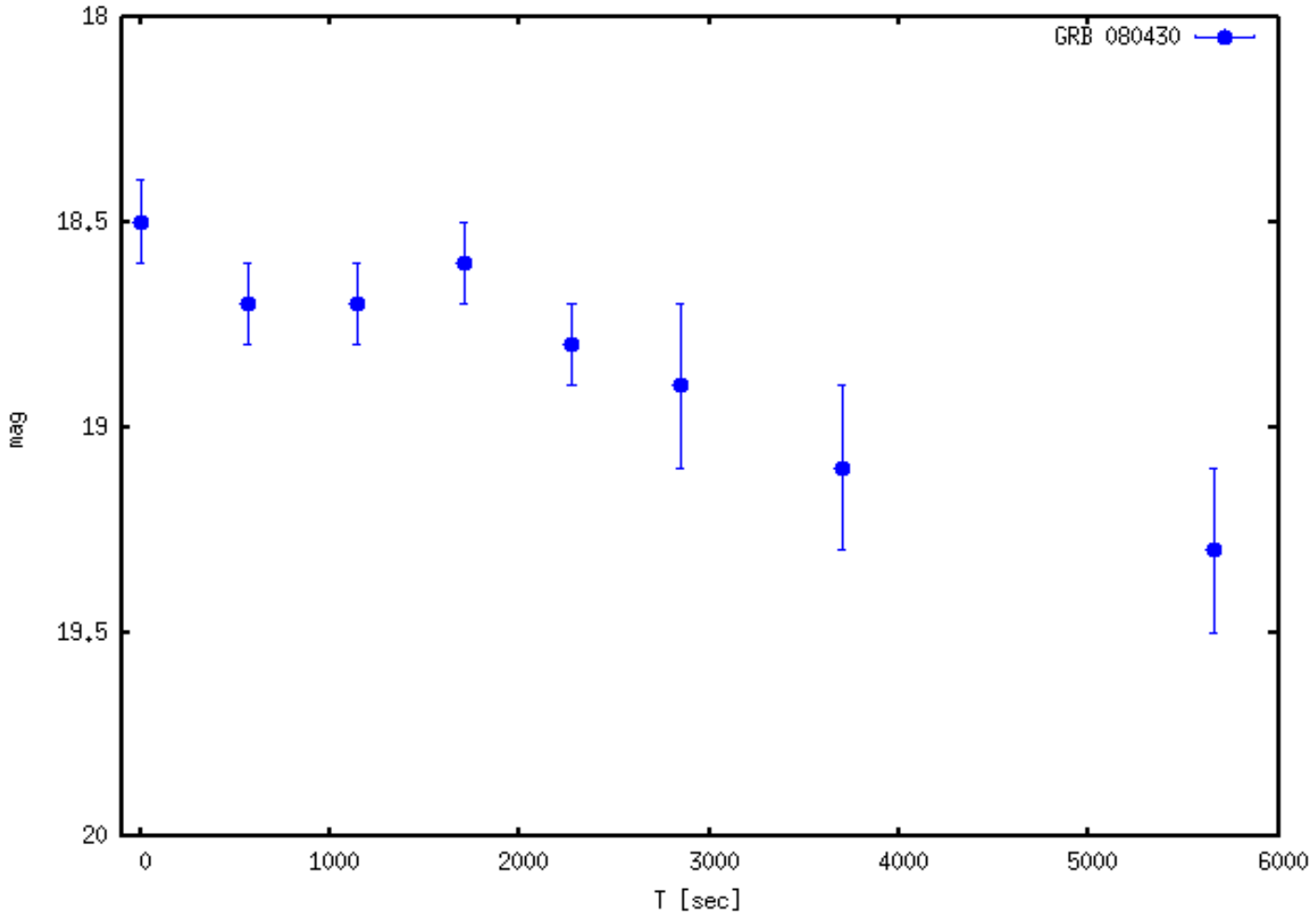
But we have seen 4 bursts!

Our first GRB
GRB 080430 | ~18.9 (R) mag | GCN 7651

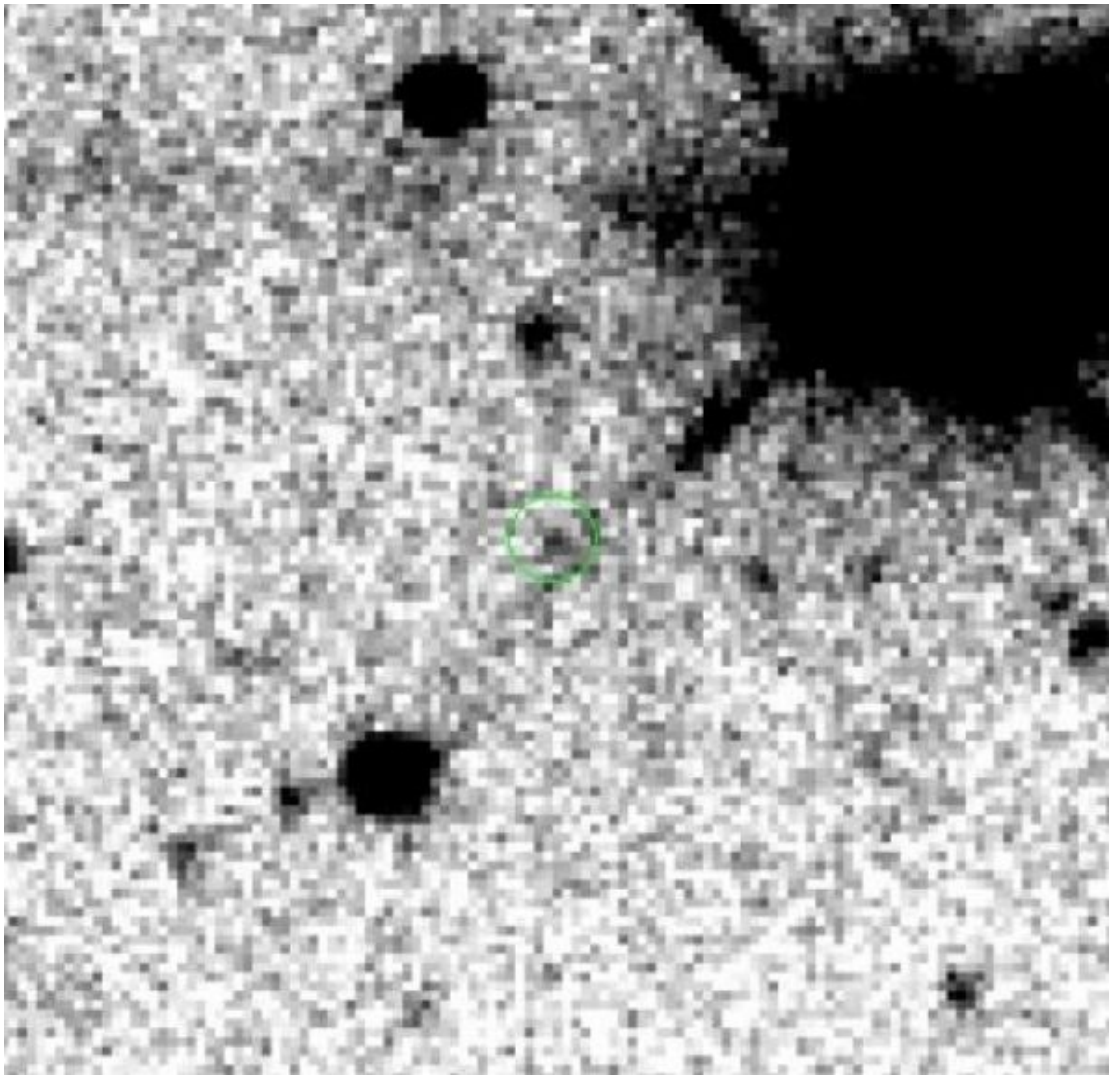


Our first GRB
GRB 080430 | ~18.9 (R) mag | GCN 7651

First, light curve of GRB in Ondrejov.



GRB 080430 | next day observation
20.3 (R) mag



OT still visible after 24h observation in bad weather conditions,
we can see 20.3 mag :-)

it is not bad for 0.5m telescope near Prague.

Thanks to Mates

GRB 080506 | next one ~ 20.2 (R) mag | GCN 7689

TITLE: GCN CIRCULAR
NUMBER: 7689
SUBJECT: GRB 080506: optical observation from Ondrejov
DATE: 08/05/07 05:09:29 GMT
FROM: Matus Kocka at Monteboo Obs,Masaryk U,Brno <koci@astronom.sk>

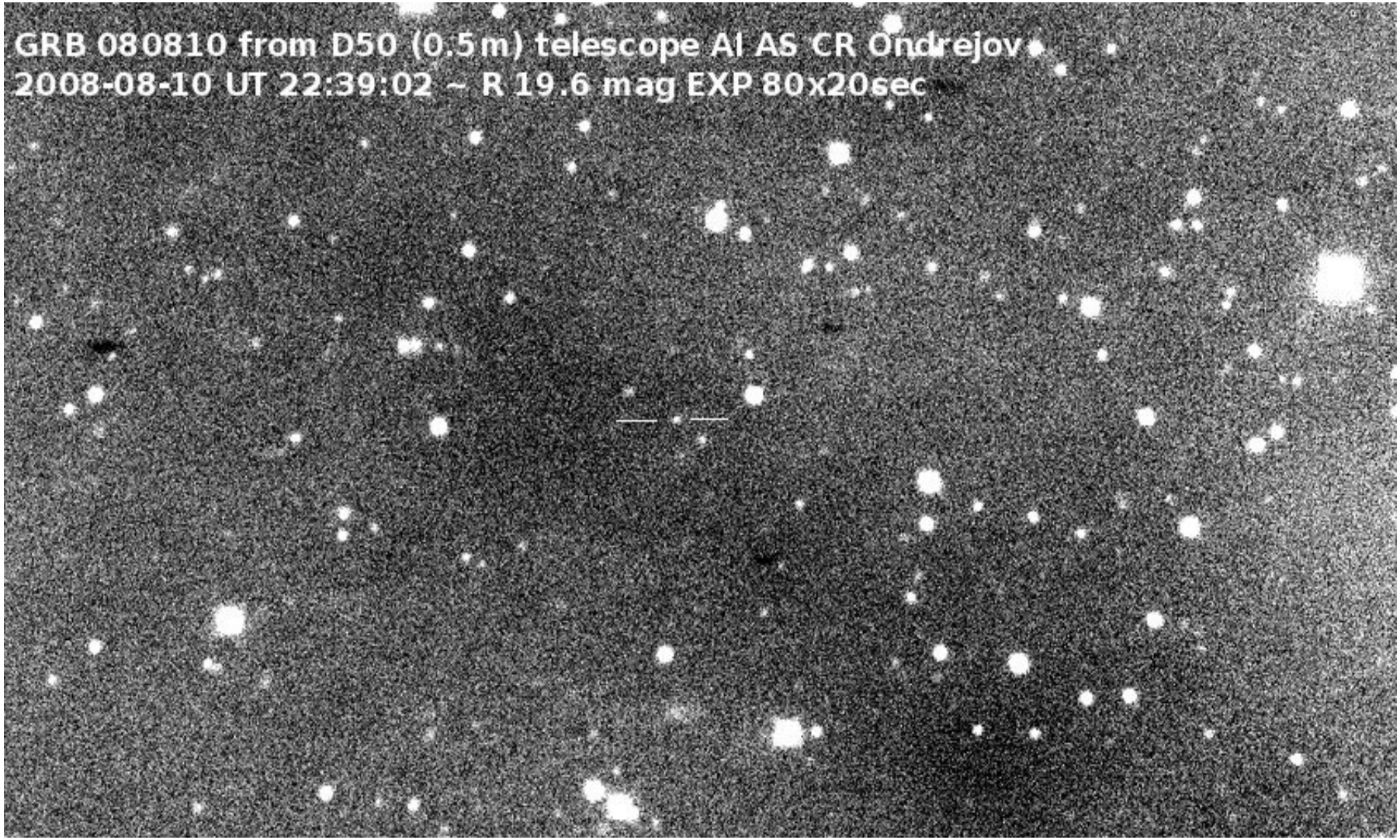
M. Kocka, M. Nekola, J. Strobl, R. Hudec, C. Polasek (AsU AV CR, Ondrejov),
M. Jelinek, P. Kubanek (IAA CSIC, Granada),
F. Munz (IASF/INAF, Bologna) A. de Ugarte Postigo (ESO) report

We observed the OT of the GRB080506 (Baumgartner et al,
GCN 7685) with the 0.5m telescope at ASU Ondrejov in
Czech Republic. We obtained a set of R-band exposures
at ~7.1h after the GRB.

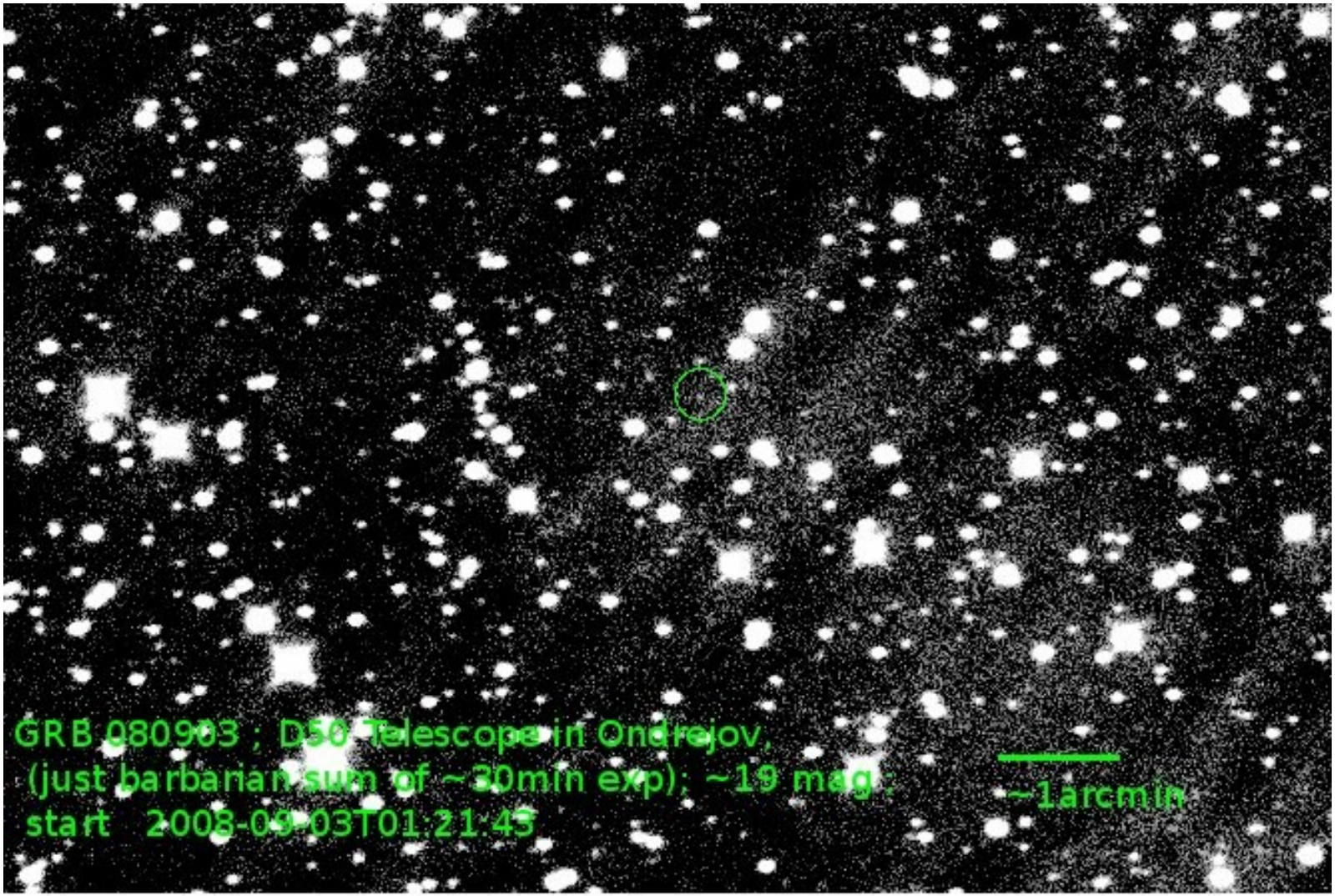
Using the same calibration as Kawabata et al. (GCN 7686) we find the
brightness R ~ 20.2+-0.4.

This message may be cited.

GRB 080810
~ 19.6 mag (R) | GCN 8092



GRB 080903
~ 19.0 mag (R)



Future of D50

Now, we are in middle of making important decisions! We need to make a big step to future.

- **Better dome**
- **Real time pipeline**
- **Better understand to RTS2**
- **Data management**
- **Web control**

The Idea of GRB net and Space weather monitoring system in Ondrejov

What we want is simple:
- 2 autonomous (robotic) telescopes Bart (25cm) D50 (0.5m)
- 2 SID detectors for observations VLF scatter from D-layer of Ionosphere
- Fish eye all-sky robotic monitor and pipeline canon EOS 50D and 4.5mm fish-eye
- Meteo-station, informations from rain detectors and clouds sensors
- All this with web output and fully autonomous

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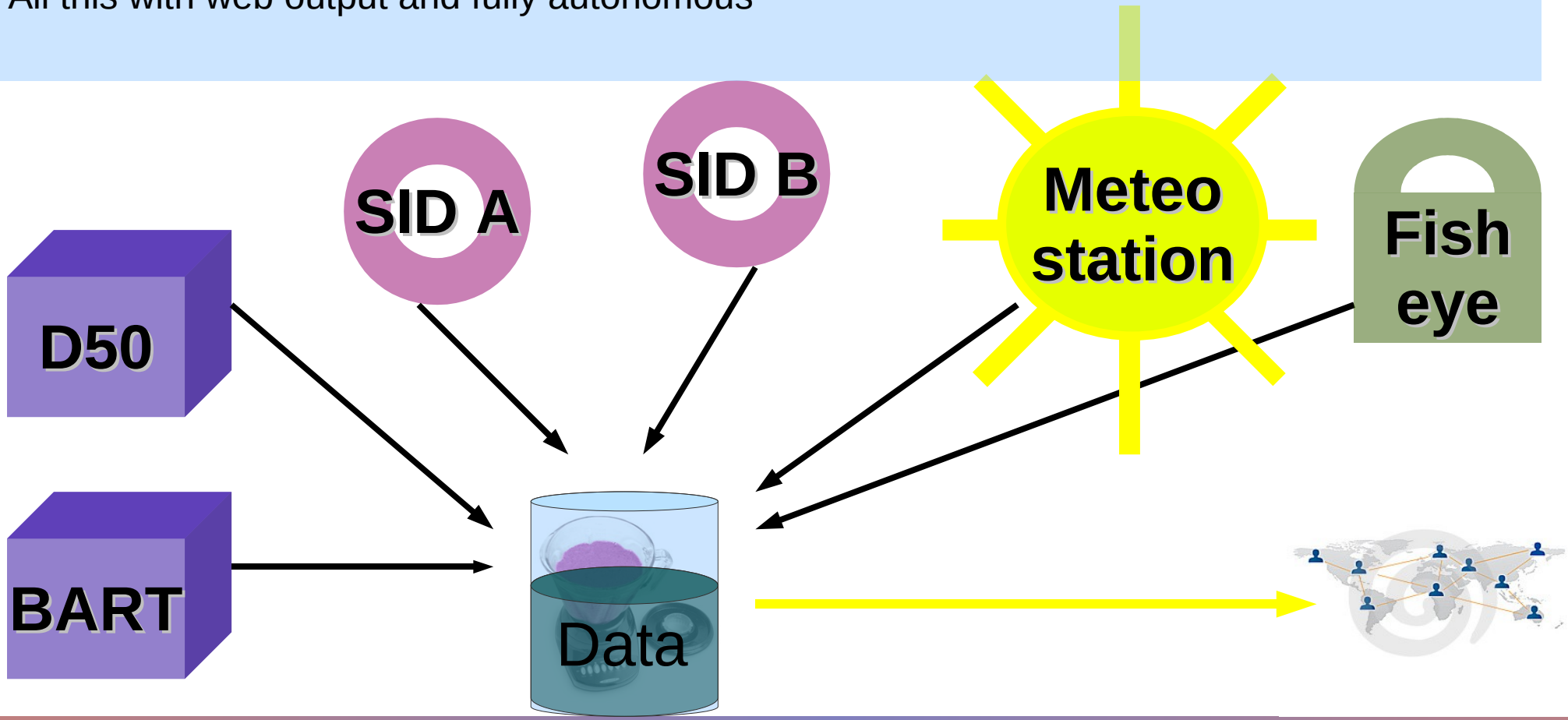

The END

Thanks to all colleagues , who work and help with this telescope
And special thanks to **Mates Jelinek** and **Petr Kubanek**